DOCUMENT RESUME

ED 316 360 RC 017 394

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TITLE Environmental Education in Sparsely Populated Areas: Conflicting Attitudes in Student's Conception of Environmental Issues.
PUB DATE 88
NOTE 14p.; Paper presented at the ICASE World Conference on Science Education (Canberra, Australia, July 1988).
AVAILABLE FROM University-College of Jonkoping, P.O. Box 1026, S-55111 Jonkoping, Sweden
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)
JOURNAL CIT Pedagogiska Rapporter; n22 1988

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Community Change; Educational Research; Elementary Education; *Environmental Education; Foreign Countries; *Rural Education; Rural Environment; *Student Attitudes; Student Reaction
IDENTIFIERS *Environmental Attitudes; Environmental Education Research; *Sweden

ABSTRACT

Two studies in southeastern Sweden examined rural children's conflicting attitudes toward environmental change in the local community. Following a yearlong curriculum in environmental studies, 14 fifth and sixth graders in Ramkvilla were presented with an imaginary scenario involving the construction of a new factory. Their small, somewhat idyllic community has been dependent on agriculture and tourism. Negative and positive consequences of the new industry were integrated into the scenario. Content analysis of students' written responses revealed consistently strong positive attitudes toward the change in the areas of "more children in school" and "more jobs in the community" and negative attitudes in the area of "consequences for nature." In a similar study in Mullsjo, 25 students in grades 3-6 who had completed a yearlong environmental curriculum wrote essays about the changes they would meet in the future and their attitudes toward these changes. The strength of students' attitudes were affected by the interaction of: (1) perception of the geographical or historical distance of the change; (2) whether the change was viewed as positive or negative; and (3) whether the change was viewed with empathy or indifference. These results illustrate rural students' conflicting attitudes toward environmental change. To avoid fostering such conflicting feelings, environmental education must employ a global perspective on society and its future, and must incorporate cultural and ecological development relationships. (SV)

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Environmental Education in Sparsely Populated Areas
- Conflicting attitudes in Student´s Conception of Environmental Issues

Mohamed Chaib

1988

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Pedagogiska rapporter,
Nr 22, 1988
15 p **ISSN: 0280 - 8935**

Abstract

This paper intends to describe the contradictions that exist among students in the perception of the environmental issues expressed as changes occuring in their communities. The research was conducted in two sparsely populated areas in South Sweden between 1982 and 1984. The results of two studies are here summarized. These studies were conducted within the context of a research project at the university of Jönköping, Sweden. Two groups of students in grade 4 to 6 followed during a school year an environmental education program. At the end of the program they were asked to describe what the changes in environment will be in the future. One group was asked to write an essay in response to an imaginary newspaper article they had just read. The other group wrote an open essay relating to student´s conception of the changes in the environment in their community. Analysis of the results by means of content analysis and hermeneutical interpretation shows that both groups have conflicting apprehensions about the changes that may occur in the environment. The findings are discussed in pedagogical terms and some ideas about how these findings might be used as teaching variables in environmental education are put forward.
This report has been originally presented at the ICASE World Conference on Science Education in Canberra Australia, in July 1988.

Key Words: Environmental Education, Cognitive development, Community development, Compulsory School, Teacher´s Training, Qualitative Research, Educational Methods.

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Introduction

Environmental education is essentially future oriented towards a positive attitude change among pupils. This future orientation, however, can never constitute a brutal rupture with the sociocultural constraints in pupils´ cultural heritage. These constraints are in fact essential to the understanding of the mechanism that governs the cognitive changes that might and should occur in people´s mind for a better understanding of the environmental issues.

This argumentation is supported by Tilden´s interpretive theory as reported by Hammitt argueing for the role of past experiences in the perception of future environmental issues. He wrote " Past experiences determine the internal models one has on the external environment. The internal models, in turn, determine the basis of environmental perception.... Whithout internal models of some sorts, based on past experiences, perception is difficult." (Hammitt, 1981 p. 14)

Environmental education can be approached in many different ways. Lucas (1980-81) suggested three such approaches. One might educate **about** the environment i.e providing cognitive understanding of the environment and developing the skills necessary to obtain this understanding. One might also educate **for** the environment providing pupils with skills aimed at the preservation and the improvement of particular environmental purposes. Finally one might also educate **in** the environment. Education **in** the environment sometimes also called education **from** the environment aims at developing techniques of instruction.

A combination of education **in** and **about** the environment has been adopted by our research team at the University of Jönköping in Sweden in order to develop a curriculum adapted to the local conditions existing in two small communities, Ramkvilla and Mullsjö, in South-East Sweden, between the years 1982-1984. The results of the curriculum development studies are reported elsewhere (Cf: Chaib, 1982, Lundin, 1983, and Hugander 1983a, 1983b). In this paper I will report the results of two studies conducted within our project aiming at understanding pupils´ attitudes toward´s the conflicting goals in environmental education.

The role of the school in attitude changes

The school in modern society plays a central role in the development of attitudes towards the society and its environmental future. In a recent study conducted in Norway, Solstad (1984) advanced a model depicting the relationship existing between school and society. This model is here adapted for the analysis of the relationship between the role of the school in vehiculating attitudes to the environment.

The model emphasizes the historical values transmitted by the school and their impact on pupil´s ability to understand future changes in the society. This kind of historical ties between past and future values has been proved to be more marked in sparsely populated areas where people live more in harmony within restricted natural and cultural environment, than in urban areas. Any attempt to develop a curriculum for the environment is supposed to take into account the strong "anxiety" for change which is markedly present in the mind of people living in rural areas. In this context Solstad (op.cit) argues very strongly for a curriculum adapted to the local conditions in which people live.

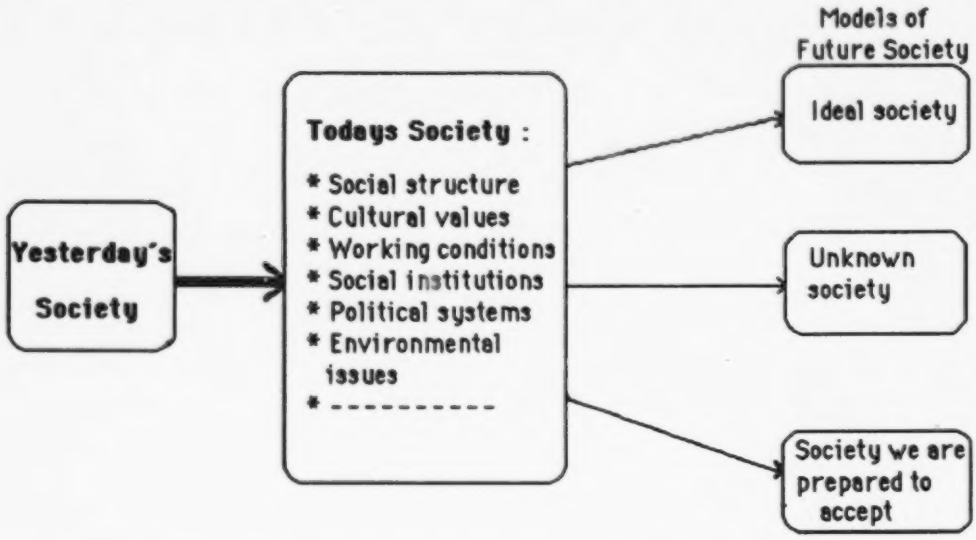

Figure 1: School as an active instrument for change in the local environment (adapted from Solstad, 1984)

The model above shows the possibility of conflicts emerging in pupils´ understanding of the environmental issues that might occur in society. The "cognitive" conflicts may occur e.g when positive attitudes towards economic and industrial welfare are encountered by "fears" for negative consequences for the living environment. Conflicts in children emerge most probably when teachers and instructional materials tend to idealise and to overemphasize the positive effects of environmental conservation, at the same time when students are confronted with the same development in a more negative way.

Solstad´s argues for environmental curricula that are adapted to the local conditons in which children live. His approach has been tested with apparent success in sparsely populated areas in Northern Norway. Solstad´s arguments find support in Lutts (1985) who emphasizes the role of fostering cultural

identity in environmental education. Lutts recommends an environmental education based on the liking of cultural and natural heritage and on discovering and telling stories that "... integrate human culture, ecology, and evolution and that establish our continuity with life on earth in a psychologically meaningful manner." (Lutts, 1985 p. 40).

Since the shape of the future society is unknown, environmental education tends to be primarily concerned with the teaching of an idealistic, ecologically balanced society rather than the teaching of realistic scenarios that enhance students conception of the future they are prepared to accept.

In what way are these conflicts reflected in pupils´ attitude towards the environment ? What is the structure of these conflicts in pupils´ cognitive understanding ?

Studying the results of a simulated scenario

The conflicting attitudes of pupils toward the future developments in a local environment were studied among a population of 14 grade 5 and 6 students in a non-graded school in Ramkvilla. The test consisted of an imaginary scenario in which the students were asked to take position on the construction of a new factory in their small community. Negative and positive consequenses of the new industry location were integrated into the scenario which was formulated as an article from the local newspaper (se Appendix 1). Three typical statements from known persons constituted the basic attitudinal categories upon which the students had to express their attitude.

Ramkvilla is a small and somewhat idyllic community of ca 350 inhabitants with agriculture and tourism as the principal resources. The community has only one school with 46 students integrated in two non-graded classes from grade 1 to 6. The "scenario" test here reported was administered at the end of a curriculum in environmental studies that was conducted during a school year.

The students were asked to read carefully the text of the scenario and then to answer by writing what they felt about the statements made by the three persons in the newspaper article. Each statement implied a typical response to the challenge made by the localisation of the new industry in Ramkvilla. The students were furthermore asked to make their own statements about what they felt about the construction the of the new factory . The results collected by means of content analysis are shown in table 1 below.

The first three categories A, B and C were those implied in the scenario itself hence the propention of the students to clearly express points of view on these categories. The following categories D to J occured spontaneously in the answers when the students motivated their opinions about categories A to C.

It is interesting to note that most of the students have a positive attitude towards having "more children in school" and "more job opportunities" in the community.

Table 1. Obtained categories of attitudes from the scenario test towards the construction of a new factory at Ramkvilla

Obtained categories	Positive attitude	Negative attitude	No opinion
A. More children in school	10	3	1
B. More jobs in the community	13	1	0
C. Consequences for nature	1	13	0
D. Logging	1	3	10
E. More traffic	0	1	13
F. Developed services	5	1	8
G. New buildings	2	2	10
H. Better roads	1	0	13
I. Consequences for one´s own future	4	0	10
Total	37	24	65

This emphasizes the students consciousness and concern about the issues which are of vital interest for the survival of their community. Consequences of the construction of a new factory at Ramkvilla, however, are seen as a threat to the natural environment. The choice between accepting a new industry at Ramkvilla or not, is here shown to be related to the conflicting attitudes among students between the will to increase job opportunities and the propension to preserve the natural environment. Five students see the conservation of the natural environment as the most important thing and take position against the construction of a new factory, whereas nine students give priority to job opportunities over the preservation of nature and thus accepted that a new factory should be built at Ramkvilla anyway.

Typical attitude categories towards the environment e.g "traffic" and "road construction" have been considered by only few students. A possible explanation is that children in Ramkvilla have such a modest experience of traffic environment and road problems hence their difficulty to note and make statements about these typical urban issues. The result of the study shows a general positive attitude towards the local environment and a conflicting attitude to the changes that may occur in it even if these changes

mean higher standard of living and better welfare.

The structure of student´s conception of environmental changes

In a similar study conducted in 1983 at Mullsjö a small community in South Sweden, 25 grade 3-6 students were asked to write an essay relating " .. the changes that they will meet in future and how they conceived these changes " (cf: Nydenmo, 1985). The essay-test was administered at the end of the environmental teaching program which was followed by the students during an academic year. The purpose of the essays was to grasp the qualitative changes in students´ conception of the future as it appeared to them. The essays were analysed hermeneutically and two interpretative dimensions , one external and one internal, were found.

The external interpretation showed that students related the apprehended changes to lived experiences and related these to:

* changes occurring to their own community, Mullsjö,
* changes occurring in the natural environment,
* changes happening in the world outside their community,
* changes affecting their personal future, and
* changes relating a historical perspective.

The first two themes i.e changes in own community and changes in the natural environment, were directly related to the content of the environmental curriculum adopted in school, whereas the other themes occurred spontaneously in students´ essays.

The deeper internal analysis of students´ essays shows that students´ thinking about the future could be structured along two distinctive categories: distantiation and empathy. **Distantiation** refers to the fact that students show an attitude of "non concern" about the future. Changes are conceived from an outsider´s perspective. **Empathy,** on the other hand, refers to the situation where students conceived changes from an insider perspective. They see changes from close range and related these changes to their own person, their feelings and their thoughts. It is obvious that changes conceived with empathy are the most probable to produce readiness among the students for positive actions toward the environment.

The result of the study shows that students´ attitude towards the environment and towards the future changes that may occur in it are apprehended in a geographical and historical perspective. Positive and negative attitudes toward changes in the environment are thus strongly related to whether these changes will happen in geographically and historically close or distant perspectives. In other words changes are conceived both in term of space and time.

In concluding the analysis of the data reported above one may formulate a general theoretical framework stating that the growth of attitudes towards environmental changes are intertwisted with two basic factors. The feeling of whether changes are perceived as geographically distant or close event, and whether the changes are psychologically perceived with emphathy or distantiation. A synthesis of the relationship between these two basic factors is illustrated in table 2, below.

Table 2. Basic factors affecting the formation of student's attitudes towards changes in their living environment

Geographical and Historical distance		Student's feelings: Empathy	Distantiation
Local changes	Positive changes	weak	weak
	Negative changes	**Strong**	weak
Distant changes	Positive changes	weak	weak
	Negative changes	weak	**Strong**

As can be seen the students express with empathy strong feelings about negative environmental changes when there is a probability that these changes will occur in the local environment. The students also express strong but distant feelings about negative environmental changes when they occur in distant geographical and historical places.

Concluding remarks

The whole essence of environmental education is how to translate into teaching variables these conflicting and somewhat contradictory psychological feelings among students. Is fear for negative changes

something negative or could it be used positively in teaching situations ? Fear without reason is of course unnecessary, yet fear for a threatening future is important if it can be used in order to achieve readiness for action. Whether students should or should not be afraid for changes in the environment is dependent upon the kind of knowledge transmitted by the curriculum. This kind of knowledge, specifically the knowledge concerning the environment, should be based on realistic depictions of the world and the future. Knowledge about the future in turn, is based on historical antecedents and these antecedents ought to be introduced more systematically in environmental education in order to enhance the students´ insights in ecological, cultural and global problems.

Our own studies at Ramkvilla and Mullsjö show that at least five out of the 25 characteristics of environmental education identified by Hart (1981) have particular signification for the development of environmental curricula in sparsely populated areas : Global Viewing, Values Clarifying, Environmental Issues Oriented, Future Oriented and Community Oriented. (for a detailed discussion of these characteristics se Hart, 1981).

Unfortunately many environmental teaching programs lack this kind of global perspective and are strictly concerned with the biological nature of man and his natural environment. Some other programs adopt a narrow perspective and teach the environment out of the frame óf a restricted geographical and cultural area without any relation to the global perspective. This form of environmental teaching will probably lead to a fragmented knowledge and will not necessarily clarify the intricate dimension of the environmental concept.

There are some risks in "digging" too deep into the local environment. Students may lose the ability to grasp and to appreciate the global dimensions of the environment. There is a general belief that students will be more able to understand the global aspects of the environment if they begin by deeply studying their own environment. Our data could not give support for that assumption. There is no general theory supporting the thesis that people who are more acquainted with their own living context are necessarily more apt to understand the living context of other people.

In fact Vygotsky (1962), Bruner (1971) and Bernstein (1971) agreed upon the general thesis that it is very difficult for children to grasp the general characteristics of a phenomenon out of well known contextual frames. Bruner (1971) in particular explicitly stated that he could not support the view of those who affirm that teaching e.g social subjects should begin by the presentation of what is mostly familiar to children from their street, their home or their neighbourhood. Bruner argues instead for a teaching method that stimulates children´s curiosity by the presentation of facts whose content and signification appear clearly, independent of whether these facts happen to occur in a nearby or remoted area.

Whether the best way to teach the environment is by means of local or global perspective is yet a research proposal that has not been enough investigated. My own argumentation in this paper has been to suggest that environmental education should not be confined to restricted narrow local perspectives if these are not enough related to global views about society and its future. My second argumentation suggests the teaching of environmental education based on cultural and ecological development relationships. Without these two approaches in mind teachers and environmentalists might foster a sense of conflicting feelings among children and thus inhibit the fostering of positive attitudes towards the environment.

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Appendix 1

In the Vetlanda Courier the following article could be read on the 25th of May, 1982.

NEW VACANT JOBS IN THE VICINITY OF RAMKVILLA

Estrella wants to build a Chips Factory at Ramkvilla. At the factory one hundred people will work in manufacturing, in transport and in office work. In addition to that the farmers of the neighbourhood will be given opportunities to deliver potatoes. The factory needs much fuel for the manufacturing process and good roads for the transports.

The factory will be built close to "Klocksjön", as it needs much water for the manufacturing and to cool the machines.

The factory will build its own purification plant, which will purify the discharges at fifty per cent.

Anton Person, Chairman of the Local Housing Committee, is of opinion that twenty-five terraced houses can be built for all those who want to move in. Timber to build with as well as land to build on would be necessary.

Our reporter asked the inhabitants of Ramkvilla how they liked the plans to build the factory.

Here follow some answers from those being asked:

Olle Person: If the factory will be built, I'll move to Landsbro !
Axel Oskarson: I am worried about our beautiful scenery, but I think it will be favourable to the school if more people will move in.
Astrid Larson: I like it very much, because this district is in great need of chances of work.

(The Editor)